

REMARKS

INTRODUCTION

In accordance with the foregoing, claims 19, 21 and 32-37 have been amended, new claims 38-47 have been added. No new matter is submitted.

Claims 19-26 and 28-47 are pending and under consideration.

PENDING REJECTIONS

Claims 19, 21 and 32-37 were previously amended in the Amendment filed June 14, 2004, resulting in the recently issued Office Action mailed September 13, 2004, where Shoji et al. is cited against the claims. Though applicants believe Shoji et al. fails to disclose or suggest the presently claimed invention, it was pointed out that the priority date for the present application precedes the earliest date for Shoji et al. Accordingly, the priority date for the present application has been perfected with the verified translation, filed on September 22, 2004. With this submission, it is respectfully submitted that Shoji et al. is not a proper § 102 reference.

In addition, upon further review of Furukawa et al., U.S. Patent No. 6,345,026, it was determined that the previously submitted amendments to claims 19, 21 and 32-37 were not necessary to differentiate the claims as a whole. Therefore, these most recent amendments to claims 19, 21 and 32-37 have been deleted from the independent claims and added as new dependent claims.

Thus, as the outstanding rejections based on Shoji et al. are now moot, and as claims 1-21, 25-26 and 28-35, without the aforementioned previous amendments, were rejected under 35 USC § 102 as being anticipated by Furukawa et al., U.S. Patent No. 6,345,026, the allowability of the pending claims will be addressed below with a further discussion of the differences between Furukawa et al. and the pending claims. The previously cited obviousness argument, regarding claims 22, 24 and 36 will be similarly addressed below.

PREVIOUS REMARKS

The previous remarks presented in the Amendment filed June 14, 2004 are respectfully retracted, in view the presently filed Preliminary Amendment, as the previous amendments have been redacted from the presently pending independent claims. In addition, it is noted that previous comments, referencing the then pending claimed invention and portions of the specification, were merely referencing exemplary embodiments of the then presently claimed invention and were not intended to limit the invention beyond the then recited claim features.

In the previous remarks, it was pointed out that the then claimed invention pertained to three groups/ranges. However, with the presently submitted Preliminary Amendment, applicants are particularly emphasizing that the presently claimed invention, of the independent claims, is not limited to these three groups/ranges. Additional embodiments are thus still available in the presently claimed invention, e.g., embodiments with less than/equal to/greater than the three groups/ranges are still available in the presently claimed independent claims.

Now, below, the allowability of the pending claims over the cited prior art is respectfully discussed.

ALLOWABILITY OF PENDING CLAIMS

Claims 19-21, 25-26 and 28-35 were previously rejected under 35 USC § 102(b) as being anticipated by Furukawa et al., (U.S. Patent No. 6,345,026 and WO98/28735). This rejection is respectfully again traversed. General discusses below regarding Furukawa et al. will reference portions of U.S. Patent No. 6,345,026, rather than WO98/28735.

By way of review and as an example, independent claim 19 sets forth:

"[a] recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a discriminator to discriminate a magnitude of a present mark of input data and magnitudes of leading and/or trailing spaces of the present mark;

a generator to control generation of a write pulse waveform in accordance with one or more grouping tables having width data of first and/or last pulses for the write pulse waveform according to the magnitude of the present mark of the input data and the magnitudes of the leading and/or trailing spaces; and

a driver to drive a light source by converting the write pulse waveform into a current signal in accordance with driving power levels for the write pulse waveform."

It is respectfully submitted that the outstanding anticipatory rejection fails to meet a prima facie case of anticipation. In addition, it is similarly submitted that it would not have been obvious to modify Furukawa et al. to disclose the presently claimed invention.

Furukawa et al., similar to other conventional methods, only shifts or delays pulses in a write pulse waveform, to compensate for generated heat, for example. Counter to this conventional shifting/delaying method, embodiments of the present invention illustrate that, rather than shifting or delaying pulse(s), the width(s) of pulse(s) within a pulse waveform can be manipulated. In Furukawa et al., the pulses themselves are derived from a standard fixed clock. See clock 28 in Furukawa et al.; illustrated in FIG. 2, 4, 6, and 8, for example.

As illustrated in FIG. 2 of Furukawa et al., Data 1 is representative of the desired overall widths of the desired marks, with each mark's width being generated by the combination of a "Starting-End Pulse 3" (Pulse 3) and an "End Pulse 7" (Pulse 7). The 3T mark illustrated in FIG. 2 illustrates this combination of Pulse 3 and Pulse 7 to generate the 3T mark. Though Pulse 3 is only 1T, and Pulse 7 is only 1T, their combination and the present environment of the medium correspondingly generate a 3T mark.

When the mark is desired to be greater than 3T, e.g., 4T or 6T, additional intermediate pulses 29 can be output between the outputting of Pulse 3 and Pulse 7. As illustrated in FIG. 2, the intermediate pulses are merely the ANDing of a generated Burst Gate 5 and the clock pulses 28. Thus, though the Pulse 3 and Pulse 7 are a full clock period, i.e., a single T, the gated clock pulses making up the intermediate pulses are only a .5T.

With the above taken into consideration, it is thus noted that, in Furukawa et al., Pulse 3 ("Starting-End Pulse 3) and Pulse 7 (End Pulse 7) will have the same width, and that width is not varied. Similarly, the intermediate pulse widths are not varied, as the clock is a fixed clock frequency.

In Furukawa et al., the physical positioning of each separate mark is being coordinated to compensate for heat generated problems, i.e., if two marks are generated too close together the heat resulting from the mutual mark generation processes will cause the resultant marks to be malformed with potential positioning errors. In Furukawa et al., the shifting or delay of Pulse 3 may be performed to compensate for the effects of the previous space and a previous ending pulse of a previous mark. Similarly, Pulse 7 may be delayed to compensate for the effects of the Pulse 3, the space after Pulse 7, and any starting pulse for the next mark. Accordingly, depending on the determined delays of Pulse 3 and Pulse 7, intermediate pulses 29 may be inserted between Pulse 3 and Pulse 7 depending on the generated gate window. If the mark is 3T or less, then no intermediate pulses will be added.

Thus, Furukawa et al. does not perform any varying of widths of pulses within a write pulse waveform. Further, as the widths of each pulse in Furukawa et al. are fixed, there would not be a need or desire to change or vary the widths, or to store width data for the same.

Thus, since the widths of the pulses in the write pulse waveform of Furukawa et al. are not variable, there would not be any need or desire to utilize a table with "width" information for a pulse(s) within the corresponding write pulse waveform. The tables illustrated in cols. 6, 7 10 of Furukawa et al. include information for delaying of pulses, or power levels of pulses, within the write pulse waveform, and are not associated with widths of individual pulses within the corresponding write pulse waveform.

Accordingly, Furukawa et al. merely sets forth the delaying of pulses within a write pulse waveform, which in practice also results in the delaying of entire marks. For example, see FIG. 4 of Furukawa et al. where the desired 6T mark is delayed in its entirety a particular amount. The tables in Furukawa et al. include delaying information for the same.

Conversely, for merely illustrative purposes and not to limit the presently claimed invention, embodiments of the present application illustrate an approach of manipulating width(s) of pulse(s) that make up the pulse waveform. For example, see FIG. 3F, of the present application, as shown by the two headed arrows, where the manipulation of the width/shifting of the pulses is illustrated. The present specification clearly explains that by shifting rising and/or falling edges of a pulse the overall width of a pulse can be manipulated. The originally filed dependent claim 20 further provides support for this width manipulation feature.

That being the case, and with this general understanding of the differences between Furukawa et al. and aspects of the present invention, the independent claims include, with differing breadth and scope, differing allowable features, including at least a pulse width manipulation/data related feature.

Therefore, as Furukawa et al. fails to disclose or suggest the manipulation of a pulse width or the storage of width information, and as the previously cited Hara, U.S. Patent No. 6,044,05, and/or Nishiuchi et al., U.S. Patent No. 5,568,461, similarly fail to disclose or suggest the same, it is respectfully submitted that the pending claims are patentably distinguishable over the cited prior art, alone or in combination.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

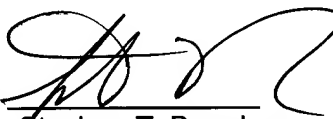
Respectfully submitted,

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11/24/04

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